

Abstract

Proton-conducting polymer membrane comprising polyazole blends and its use in fuel cells

The present invention relates to a proton-conducting polymer membrane which comprises polyazole blends and is obtainable by a process comprising the steps

- A) preparation of a mixture comprising polyphosphoric acid, at least one polyazole (polymer A) and/or one or more compounds which are suitable for forming polyazoles under the action of heat according to step B),
- B) heating of the mixture obtainable according to step A) under inert gas to temperatures of up to 400°C,
- C) application of a layer using the mixture from step A) and/or B) to a support,
- D) treatment of the membrane formed in step C) until it is self-supporting, wherein at least one further polymer (polymer B) which is not a polyazole is added to the composition obtainable according to step A) and/or step B) and the weight ratio of polyazole to polymer B is in the range from 0.1 to 50.